

ABSTRACT:

1. Multi-axial monolithic acceleration sensor
 - 2.1. In known acceleration sensors, the error angle between main sensitivity axis and the normal is only adjustable in a range of at most 20° . Or the acceleration sensors comprise different characteristics with respect to the three spacial axes, which places high demands on the evaluation electronics and precludes the use in vehicles.
 - 2.2. Multi-axial monolithic acceleration sensor, with the following characteristic features:
 - the acceleration sensor consists of plural individual sensors with respectively a main sensitivity axis arranged on a common substrate,
 - each individual sensor is rotatably moveably suspended on two torsion spring elements and comprises a seismic mass with a center of gravity,
 - each individual sensor comprises means for the measurement of the deflection of the seismic mass,
 - the acceleration sensor consists of at least three identical individual sensors,
 - each individual sensor is suspended eccentrically relative to its center of gravity and
 - is rotated by 90° , 180° or 270° relative to the other individual sensors.
 - 2.3. The invention is especially suitable for high-quality offset-stable capacitive sensors for use in vehicles.